Technology Fact Sheet for Adaptation

Reviewing and modifying existing laws, regulations, and policies relating to biodiversity and natural resources and incorporating climate change adaptation considerations (ensuring implementation) [i]

1. SECTOR: *To be written by sector expert*	Biodiversity
2. TECHNOLOGY CHARACTERISTICS	
2.1 Technology name:	Reviewing and modifying existing laws, regulations, and policies relating to biodiversity and natural resources and incorporating climate change adaptation considerations (ensuring implementation)
2.2 Introduction: *Low/high, Brief introduction to the technology*	This technology focuses on reviewing and modifying existing laws, regulations, and policies relating to biodiversity and natural resources, and involves incorporating such strategies to management plans and action plans. This is necessary to ensure that provisions are consistent with the needs of managers dealing with the effects of climate change[1]. It will entail collecting all existing biodiversity laws, regulations, policies, management plans and action plans and doing a gap analysis to see which sections need modifying to incorporate impacts of climate change on biodiversity. Once this has been identified, amendments will need to be made, and this process will need to be formally integrated to existing laws, policies, plans etc. This is a low level technology, but will require human resources and skill to review existing laws, policies, plans etc. It will need consultation with scientists, decision-makers, policy and lawmakers to ensure that the science can be translated to law, policy and planning. Gap analysis will identify which amendments need to be made, while the next step would be to incorporate such changes and make them

[1]Mawdsley, J.R., O'Malley, R., Ojima, D.S., 2009. A review of climate-change adaptation strategies for wildlife management and biodiversity conservation. Conservation Biology 23, 1080–1089.

	formalized so that they can be implemented. The most vital aspect it not amending these documents, but its eventual implementation. *Reference in existing policies, strategies and action plans:* The Biodiversity Conservation - Framework for Action[2] does not specifically relate to amending legislation to incorporate climate change considerations – as it was prepared several years prior to climate change becoming as mainstream as it is today. However it recommends various amendments and a similar review and gap analysis can be done for climate change. The Action Plan in the section on Impacts on Biodiversity has identified that impact of climate change and global warming has not been reviewed. According the National Action Plan for Haritha Lanka Strategy 1 in Mission 2: Saving the Fauna, Flora and Ecosystems is to 'Strengthen policy, legal and institutional framework for biodiversity conservation, including information sharing & networking aspects'[3].
2.3 Technology characteristics/highlights: *Few bullet points, ie. Low/high cost, advance technology; low technology*	This is a low level technology, which will require human resources and its success will depend on the skills of the reviewers. Although most reviewing and amendments will be done initially, based on possible predictions – amendments will need to be done periodically.
2.4 Institutional and organizational requirements: *How much additional capacity building and knowledge transfer is required for the adaptation option to be implemented.*	There will be no special institutional changes to be made, as review of legislation and amendments occur from time to time. Capacity building will be necessary to ensure that the reviewers understand how climate change will impact biodiversity, what changes are required and how legislation, policies and action plans will need to be changed. Implementers will need to be educated about how such changes will affect implementation and conservation activities.
3. OPERATIONS AND	

[2]Ministry of Environment and Natural Resources. 2007. Biodiversity Conservation in Sri Lanka: A Framework for Action – Addendum.

[3]National Council for Sustainable Development, 2009, National Action Plan for Haritha Lanka Programme

MAINTENANCE	
3.1 Endorsement by experts:	For details of endorsement by local experts and relevant agencies see section on *'Reference in existing policies, strategies and action plans'* in Section 2.1. Reviewing and modifying legislation, policies, management and action plans occurs from time to time - to incorporate new threats, international conventions and the overall policy of the country. Thus this is not a new process, and planning for climate change is an essential part of this. Experts have identified that reviewing existing legislation and policies as being important for climate change adaptation, by experts in peer-reviewed journals[4].
3.2 Adequacy for current climate: *Are there negative consequences of the adaptation option in the current climate? Some adaptation may be targeted at the future climate but may have costs and consequences under the current climate.*	There will be no negative consequences of this adaptation policy in the current climate. Such amendments will only be implemented as and when needed, and will not disrupt current activities. Having such amendments in early will ensure that there will be no delay in action.
3.3 Size of beneficiaries group: *Technology that provides small benefits to large number of people will be favored over those that provide larger benefits, but to fewer people.*	This process will provide benefits to a large group of people who will benefit from the sustainability, and increase of resilience of biodiversity an ecosystem services.
4. COSTS	
4.1 Cost to implement adaptation options: *Cost measures*	It is estimated that this activity will cost Rs. 15 million annually. This is based on the assumption that a budget increase of 0.75% of current conservation budgets will be necessary for this activity (based on total Forest Department and Wildlife Department annual budgets). It is estimated that 25% of this will be borne by the public sector. Some revision will need to be considered as climate change is a dynamic field and changes will need to be made periodically. Thus this

[4]Mawdsley et al, 2009.

	can be considered to be an annual budget. Cost will be for reviewing of current legislation, policies and plans and analyzing the gaps. The amendments will also not be too costly, however implementation, which will be a different component, will be expensive.
4.2 Additional costs to implement adaptation option, compared to "business as usual"	There will be some additional cost as in a business as usual scenario such a comprehensive review may not occur. However, this process will not be expensive.
5. DEVELOPMENT IMPACTS, INDIRECT BENEFITS	
5.1 Economic benefits: **Employment** - *Jobs* **Investment** - *Capital requirements*	**Employment:** • There will be a few job opportunity as reviewing will be done by a small group of people. • Implementation will create many job opportunities. **Investment:** • The investment required will be relatively minimal.
5.2 Social benefits: **Income** – *Income generation and distribution* **Education** – *Time available for education* **Health** – *Number of people with different diseases*	**Income:** • The review and amendment process itself will not generate income, but it's implementation could include income generation options such as payments for ecosystem services, community conservation, REDD etc which need to be considered at the review and amendment stage. **Education:** • Lessons and methodology used for this process will be educational for those in the conservation field. **Health:** • There will be no health impacts from this process, but its implementation will ensure better environmental management in a changing climate and thus will contribute to well being and benefits from ecosystem services.
5.3 Environmental benefits:	This review and amendment process will ensure that the regulations

Reductions in GHG emissions, local pollutants, ecosystem degradation etc.	and paper work necessary to support beneficial conservation activities are set in place. Thus the implementation will help minimize the impacts of climate change and increase resilience of biodiversity.
6. LOCAL CONTEXT	
6.1 Opportunities and barriers: *Barriers too implementation and issues such as the need to adjust other policies*	Opportunities: • It will give an opportunity to be well prepared in advance and have the legal and policy back up for conservation activities in a changing climate - rather than waiting for the changes and then modifying the policies and legislation. • Preparedness and having such legislation and policies will ensure the smooth running of climate change adaptation strategies. It will be attractive to donors. Barriers: • Changes that will result from climate change and its predictions may not be accurate and it is difficult to plan under such uncertainty. • Gap analysis and amendments will require skilled human resources – with a good understanding of the possible impacts of climate change on biodiversity.
6.2 Status: *Status of technology in the country*	Review and amendments of laws, polices, management plans and action plans occur from time to time, and thus not a new process.
6.3 Timeframe: *Specify timeframe for implementation*	The exercise can be completed within a year. It will require consultations with various stakeholders in the sector.
6.4 Acceptability to local stakeholders: *Whether the technology will be attractive to stakeholders*	Such a process will be beneficial to stakeholders as it allows better preparation for climate change and will be useful to implement activities when climate change impacts occur. Thus it is unlikely that stakeholders will not support such an endeavor.

[i] **This fact sheet has been extracted from TNA Report – Technology Needs Assessment Reports For Climate Change Adaptation – Sir Lanka. You can access the complete report from the TNA project website http://tech-action.org/**